

Objective

1. This Lobe contains Sensory Areas that receive impulses from Skin:
 (A) Parietal (B) Temporal (C) Frontal (D) Occipital
2. Body synthesis rhodopsin form vitamin:
 (A) A & B (B) B (C) D (D) K
3. Eyes of dogs and cats shine due to the layer:
 (A) Pleural (B) Tapecum (C) Tapetum (D) Tampenak
4. The example of Stimulus is:
 (A) Muscles (B) Ear (C) Brain (D) Cold
5. The length of Spinal Cord is about:
 (A) 40 cm (B) 40 inch (C) 40 nm (D) 40 mm
6. The largest endocrine gland in human body is:
 (A) Pancreas (B) Thyroid gland (C) Parathyroid gland (D) Adrenal gland
7. Auditory canal ends in:
 (A) Pupil (B) Pinna (C) Eardrum (D) Cochlea
8. On receiving the message from coordinators, the effectors perform action is called:
 (A) Effectors (B) Receptors (C) Coordinators (D) Response
9. Two glands are situated above the kidneys:
 (A) Adrenal (B) Thyroid (C) Pancreas (D) Parathyroid
10. He wrote three books on diseases and surgery of eye:
 (A) Abdul Malik Asmai (B) Ali ibn Isa (C) Ibn al-Haytham (D) Bu Ali Sena
11. Which hormone develops the male secondary sex characters?
 (A) Insulin (B) Progesterone, (C) Testosterone (D) Estrogen
12. Temporal lobe is concerned with:
 (A) Visual information (B) Hearing and smell
 (C) Fear (D) Control of skeletal muscle
13. Owl is not able to see during day time due to deficiency of:
 (A) Retina (B) Rods Cells (C) Fovea (D) Cone cell
14. Rods contain a pigment:
 (A) Rhodopsin (B) Vitreous Humour (C) Aqueous Humour (D) iodopsin
15. Decreases the level of calcium ions in blood:
 (A) oxytocin (B) calcitonin (C) parathormone (D) vasopressin
16. In neuron, nucleus is found in:
 (A) axons (B) node of Ranvier (C) cell body (D) myelin sheath
17. A hormone testosterone is secreted by:
 (A) thyroid gland (B) pancreas (C) adrenal gland (D) gonads

18. Oval window is found in:

- (A) middle ear (B) internal ear (C) eye (D) external ear

19. Myelin sheath is secreted by cells:

- (A) red blood (B) Schwann (C) dendrites (D) Winds blood

20. Which one is not included in the symptoms of diabetes mellitus?

- (A) loss of weight (B) weakening of muscles
 (C) tiredness (D) difficulty in breathing

21. Which hormone increases the rate of reabsorption of water form nephron?

- (A) insulin (B) thyroxin (C) vasopressin (D) oxytocin

22. If somatotrophin is excessively produced after growing age, it causes:

- (A) dwarfism (B) tetany (C) gigantism (D) acromegaly

23. Which hormones are secreted by ovaries?

- (A) estrogen (B) glucagon (C) testosterone (D) insulin

24. Types of neurons on the basis of their functions are:

- (A) 6 (B) 3 (C) 4 (D) 5

25. In which part of neuron cell nucleus is present?

- (A) Axons (B) Schwann cells (C) Cell body (D) Dendrites

26. How many layers are of meninges?

- (A) 6 (B) 5 (C) 4 (D) 3

27. Which is not a layer of eye?

- (A) Pupil (B) Retina (C) Sclera (D) Choroid

28. The organs, tissues or cells of body that detect the stimuli are called:

- (A) Coordinators (B) Receptors (C) Effectors (D) Stimuli

29. Ovaries secrete hormone:

- (A) Glu (B) Insulin (C) Estrogen (D) Thyroxin

30. A thick Muscular structure beneath the Lungs is called:

- (A) glycerol (B) ethanol (C) acrylic acid (D) Formic acid

31. This product is used in the production of soaps:

- (A) Diaphragm (B) Pericardium (C) Epicardium (D) Peritoneum

32. The number of pairs of spinal nerves in humans is:

- (A) 33 (B) 31 (C) 24 (D) 12

33. All of these are hormones except:

- (A) Thyroxin (B) Glucagon (C) Pepsinogen (D) insulin

34. Any changes in environment:

- (A) Effect (B) Coordination (C) Response (D) Stimulus

35. The outer region of spinal cord is made up of:

- (A) white matter (B) gray matter (C) neuroglia (D) dendrites

36. Incus bone belongs to:

- (A) Nose (B) Ear (C) Mouth (D) Eye
37. The projection of neuron that carries nerve impulse away from cell body is:
 (A) Axon (B) Node of Ranvier (C) Myelin Sheathe (D) Dendrites
38. It is the union of several axons:
 (A) Nerve (B) Schwann cells (C) Dendrites (D) Node of Ranvier
39. Processes that carry nerve impulses away from the cell body are called:
 (A) Axons (B) Myelin sheath (C) Dendrites (D) Synapses
40. The portion of the nervous system that is involuntary in action:
 (A) Motor, nervous system (B) Sensory nervous system
 (C) Somatic nervous system (D) Autonomic nervous system
41. Which neurons are present inside the central nervous system?
 (A) Sensory and motor neurons both (B) Motor neurons only
 (C) Interneurons only (D) Sensory neurons only
42. The part of the brain responsible muscle movement, interpretation of the senses and the memory is the:
 (A) Cerebellum (B) Cerebrum (C) Medulla oblongata (D) Pons
43. Apart from hearing, what other major body function is performed by the ear?
 (A) Reduction in nerve pressure (B) All of these
 (C) Body balance (D) Hormone secretion
44. This is NOT a part of the hindbrain:
 (A) Cerebellum (B) Medulla oblongata (C) Cerebrum (D) Pons
45. If you look at an intact human brain, what you see the most is a large, highly convoluted outer surface. This is the:
 (A) Cerebellum (B) Pons (C) Medulla oblongata (D) Cerebrum
46. All of these are hormones except:
 (A) Pepsinogen (B) Glucagon (C) Thyroxin (D) Insulin
47. Central nervous system. include brain and:
 (A) heart (B) noto cord (C) vertebra (D) Spinal cord
48. Which one controls rage, pain, pleasure and sorrow?
 (A) midbrain (B) medulla (C) hypothalamus (D) cerebellum
49. No. of pairs of cranial nerves in human are:
 (A) 16 (B) 14 (C) 10 (D) 12
50. The round hole in the centre of Iris is:
 (A) Pupil (B) Cornea (C) Retina (D) Sclera
51. The middle layer of human eye/ eyeball is:
 (A) Pupil (B) Choroid (C) Cornea (D) Sclera
52. Rhodopsin is present in a part of eye:
 (A) Fovea (B) Ligament (C) Rods (D) Sclera
53. Central nervous system consists of:
 (A) hormones (B) Spinal cord (C) brain (D) Both A & B

54. The outer most layer of human eye consists of:

- A Sclera & Cornea B Cornea C Retina D Sclera

55. Internal layer of eye is:

- A Ligament B Retina. C Choroid D Blind spot

56. In a human eye there are rods about lac.

- A 200 B 225 C 125 D 100

57. Children of human eye contains blood vessels in:

- A Iris B Pupil C Retina D Choroid

58. The name of pigment found in cones is:

- A Iodopsin B Rhodopsin C Tarentum D iodine

59. Hypermetropia is also called:

- A night blindness B long sight C short sight D myopia

60. Who described 130 diseases of eye?

- A Ali bin Mussa B Jabbar bin Hyyan C Ali ibn Isa D Newton

61. The part of skullbone in which eyes are found is called:

- A Eye lids B Sockets C Orbits D Orbits & Sockets

62. Which part of middle ear separates It from inner ear:

- A oval window B malleus C incus D Stapes

63. In auditory canal's wall glands produce:

- A Blood B Wax C Nerve impulse D Auditory Fluid

64. The Cochlea is-present in:

- A Middle Ear B External Ear C Internal Ear D None of these

65. Which organs help to maintain the balance of body?

- A nose B nose C legs D ears

66. The smallest bone of human body is:

- A Stapes B Malleus C Vertebra D Incus

67. If a new born baby feeds on mother's milk as a result of which production of mothers milk will:

- A stop B Increase C Continue with intervals D Decrease

68. When the human body has low amount of water then Pituitary gland secretes:

- A TSH B Oxytocin C Vasopressin D Insulin

69. Increases rate of reabsorption of water from nephrons:

- A Glucagon B parathormone C Oxytocin D Vasopressin


70. Hormone increasing level of calcium ions in blood is:

- A parathormone B Calcitonin C Adrenaline D Oxytocin

71. Disease caused by deficiency of iodine in food is called:

- A dwarfism B goiter C hyperthyroidism D diabetes mellitus

72. The name of gland present beneath the larynx in human neck is:

- (A) gonads (B) adrenal (C) thyroid (D) pituitary
73. parathyroid glands secretes hormone, is called:
(A) Thyroxin (B) Epinephrine (C) Calcitonin (D) parathormone
74. Which hormone is secreted in case of emergency situation:
(A) Adrenaline (B) Oxytocin (C) Calcitonin (D) Thyroxin
75. Blood glucose levels remains in humans per liter: 
(A) 10g (B) 1g (C) 0.5g (D) 0.1g
76. This hormones is necessary for the ejection of milk from breast:
(A) Calcitonin (B) Thyroxin (C) Oxytocin (D) Parathormone
77. Which is responsible for puberty and voice pitch lowering in male:
(A) Glucagon (B) Estrogen (C) Progesterone (D) Testosterone
78. Male gonads are known as:
(A) Testes (B) Egg cells (C) Ovaries (D) Spores
79. Which hormone causes contraction of uterus at the time of birth:
(A) Calcitonin (B) Oxytocin (C) Thyroxin (D) Vasopressin
80. Pinna (external ear) is made up of:
(A) Fibers (B) Bone (C) Cartilage (D) Muscles
81. Which type of gland produces thyroxin Hormone:
(A) Pancreases (B) Parathyroid (C) Adrenal (D) Thyroid
82. Is responsible for chemical coordination:
(A) Reproductive System (B) Nervous System
(C) Circulatory System (D) Endocrine System
83. Receives and analyzes visual information:
(A) Occipital Lobe (B) Parietal Lobe (C) Temporal Lobe (D) Frontal Lobe
84. Decreases the concentration of Glucose in Blood:
(A) Calcitonin (B) Insulin (C) Glucagon (D) Testosterone
85. Iodopsin is present in:
(A) Cornea (B) Choroid (C) Cones (D) Rods
86. The nature of myelin sheath is:
(A) rigid (B) conductor (C) elastic (D) insulator
87. The deficiency of this vitamin causes poor night vision:
(A) vitamin A (B) vitamin K (C) vitamin C (D) vitamin B
88. The unit of nervous system is:
(A) bowman's capsule (B) neuron (C) nephron (D) alveolus
89. Due to deficiency of which vitamin causes poor night vision:
(A) Vitamin D (B) Vitamin C (C) Vitamin A (D) Vitamin B
90. It is the part of inner ear:
(A) pinna (B) osier (C) eardrum (D) cochlea

91. The lobe which receive impulses from skin is:

- (A) occipital (B) temporal (C) parietal (D) frontal

92. Paralysis is disease due to disorder in:

- (A) Endocrine system (B) liver (C) heart (D) nervous system

93. There are major region of Human Brain:

- (A) 3 (B) 2 (C) 4 (D) 5

94. Part of neuron which takes impulses towards cell body are called:

- (A) Ganglia (B) Dendrites (C) Myelin sheath (D) Axons

95. The tympanum belongs to which part of ear?

- (A) Vestibule (B) Internal ear (C) External ear (D) Middle ear

96. Number of pair of cranial nerves in human are:

- (A) 32 (B) 16 (C) 10 (D) 12

97. Pons is present on the top of:

- (A) medulla (B) cerebellum (C) thalamus (D) cerebrum

98. The neurons having one dendrite and one axon are called:

- (A) mixed (B) sensory (C) inter (D) motor

99. In which part of Human eye cones and rods are not found:

- (A) Optic Nerve (B) Lens (C) Blind spot (D) Fovea

100. The hormone that increases the blood glucose concentration:

- (A) Calcitonin (B) Parathormone (C) Insulin (D) Glucagon

101. Myelin sheath is formed by:

- (A) Schwann cells (B) Dendrites (C) Axons (D) Cell bodies

102. Which hormone falls blood glucose concentration?

- (A) Thyroxin (B) Insulin (C) Oxytocin (D) Glucagon

103. In nervous coordination of human nervous system response is an action of after receiving message.

- (A) Receptors (B) Coordinators (C) Effectors (D) Stimuli

104. Cell bodies of many neurons form a group called:

- (A) Seed (B) Frontal (C) Nerve (D) Ganglion

105. The number of lobes in cerebral cortex are:

- (A) Four (B) Five (C) Three (D) Two

106. At the point where a spinal nerve arises from the spinal cord, there are roots of spinal nerves.

- (A) 6 (B) 2 (C) 4 (D) 5

107. Schwann cells secrete a fatty layer, called:

- (A) Impulses (B) Nucleus (C) Myelin Sheath (D) Dendrites

108. Thyroid gland produces hormone.

- (A) Glucagon (B) Estrogen (C) Insulin (D) Thyroxin

109. The cells which conduct nerve impulse are called:

110. Which one is present on the top of medulla?
 (A) Neurons (B) Muscle fiber (C) Platelets (D) R.B.C
111. Which one is present on the top of medulla?
 (A) cerebrum (B) pons (C) Cerebellum (D) midbrain
112. The function of effector is called:
 (A) Axon (B) Stimulus (C) Response (D) Impulse
113. Effectors include:
 (A) Brain (B) Muscles and glands (C) Only muscles (D) Only glands
114. No. of components of coordination process is:
 (A) 5 (B) 7 (C) 4 (D) 3
115. Which one is coordinator in nervous co-ordination?
 (A) brain (B) brain and spinal cord (C) glands (D) spinal cord
116. Which one does not act as effector?
 (A) bones (B) liver (C) brain (D) nephrons
117. Which neurons are present inside the central nervous system?
 (A) motor neurons only (B) sensory and motor neurons both
 (C) Interneurons only (D) Sensory neurons only
118. How many types of nerves are classified on the basis of property of axons?
 (A) 2 (B) 5 (C) 4 (D) 3
119. In some parts of the body many neurons cell bodies combine to make a group:
 (A) Ganglion (B) Muscles (C) Tissues (D) Nerves
120. It coordinates muscle movements:
 (A) Cerebrum (B) Cerebellum (C) Thalamus (D) Hypothalamus
121. The largest part of brain is:
 (A) thalamus (B) cerebral hemisphere (C) cerebrum (D) hypothalamus
122. Which is related to hearing and smelling:
 (A) Frontal (B) Parietal (C) Occipital (D) Temporal
123. What is the function medulla oblongata of brain:
 (A) Heart beat (B) thinking (C) Pain (D) intelligence
124. The largest part of Human Brain is:
 (A) Medulla (B) Forebrain (C) Midbrain (D) Hind Brain
125. The parts of forebrain are:
 (A) Thalamus hypothalamus and, cerebellum (B) Thalamus hypothalamus and cerebrum
 (C) Medulla, cerebellum and pons (D) Thalamus medulla and pons

★ Subjective ★

Q1: How does coordination occur in unicellular organisms?

Ans: Coordination also takes place in unicellular organisms. The response to stimuli is brought about through chemicals.

Q2: What is meant by coordination?

Ans: Coordination:

The tissues and organs in the bodies of multicellular organisms do not work independently of each other. They work together performing their many tasks as the needs of the whole body. This means that these activities are coordinated and this phenomenon is called coordination.

Q3: Differentiate between nervous coordination and chemical coordination.

Ans: Difference between nervous coordination and chemical coordination.

Nervous Coordination	Chemical coordination
Nervous coordination brought about by nervous system.	Chemical coordination brought about by endocrine system.

Explanation:

Animals have both nervous and chemical coordination system in their bodies. While plants and other organisms have only chemical coordination.

Q4: What is difference between Effector and Receptors?

Ans: Difference between Effector and Receptors is:

Effector	Receptors
<ul style="list-style-type: none"> ❖ These are the parts of body which receive messages from coordinators and produce particular response. ❖ For example hormones, nephrons etc. 	<ul style="list-style-type: none"> ❖ The organ, tissues or cells which are specifically build to detect particular type of stimuli called receptors. ❖ For example sound waves. Are detected by ears.

This diagram is just for understanding.

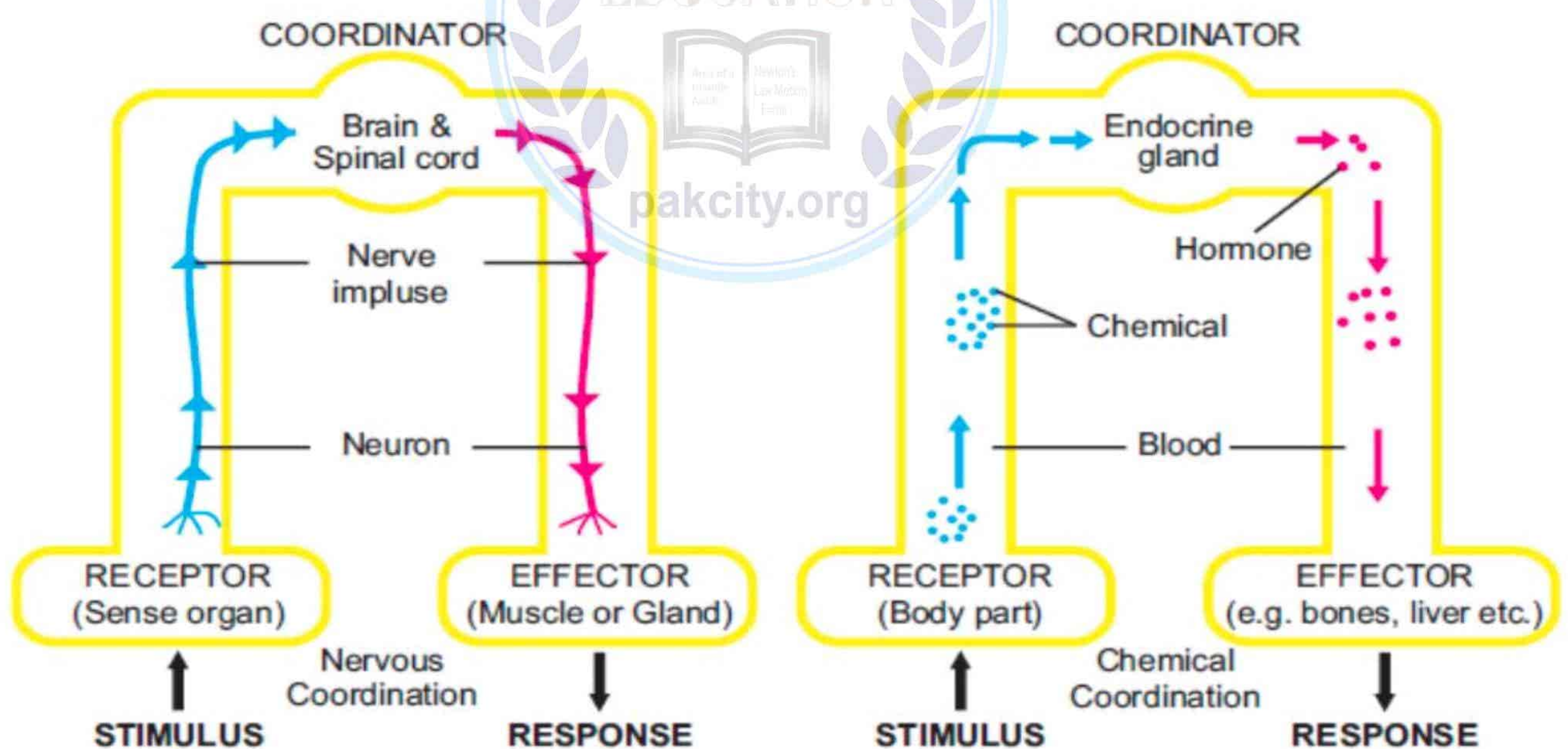


Figure : Nervous and chemical coordination

Q5: What is meant by Stimuli?

Ans: Stimuli:

Stimuli as any change in environment which can provide a response in an organism.

For example:

- ❖ Cold.
- ❖ Heat

Q6: What is meant by Response?

Ans: On receiving message from coordinators the effectors perform action. This is called response.

Q7: Define coordinators. Give an example also.

Ans: Coordinators:

These are the organs that receive information from receptor and send messages to particular organ for proper action.

Example:

Brain and spinal cord are coordinators.

Q8: Write the names of parts of co-ordinated action.

Ans: A coordinated action has five components.

- ❖ Response
- ❖ Coordinator
- ❖ Stimulus
- ❖ Receptor
- ❖ Effector

Q9: What is meant by Sensory Neurons?

Ans: Sensory Neurons:

Sensory neurons conduct sensory information from receptor towards the CNS. Sensory neuron has one dendrite and one axon.

Q10: What is the difference between Interneuron and motor neurons?

Ans: Difference between Interneuron and motor neurons is:

Interneuron	Motor Neuron
They form brain and spinal cord. They receive information, interpret them and stimulate motor neurons. They have many dendrites and axons.	Motor neuron carries information from interneuron to muscle or glands. They have many dendrites and one axon.

Q11: What is meant by saltatory impulse?

Ans: Saltatory impulse:

In a neuron, impulses jump over the areas of myelin going from node to node. Such impulses are called saltatory impulses.

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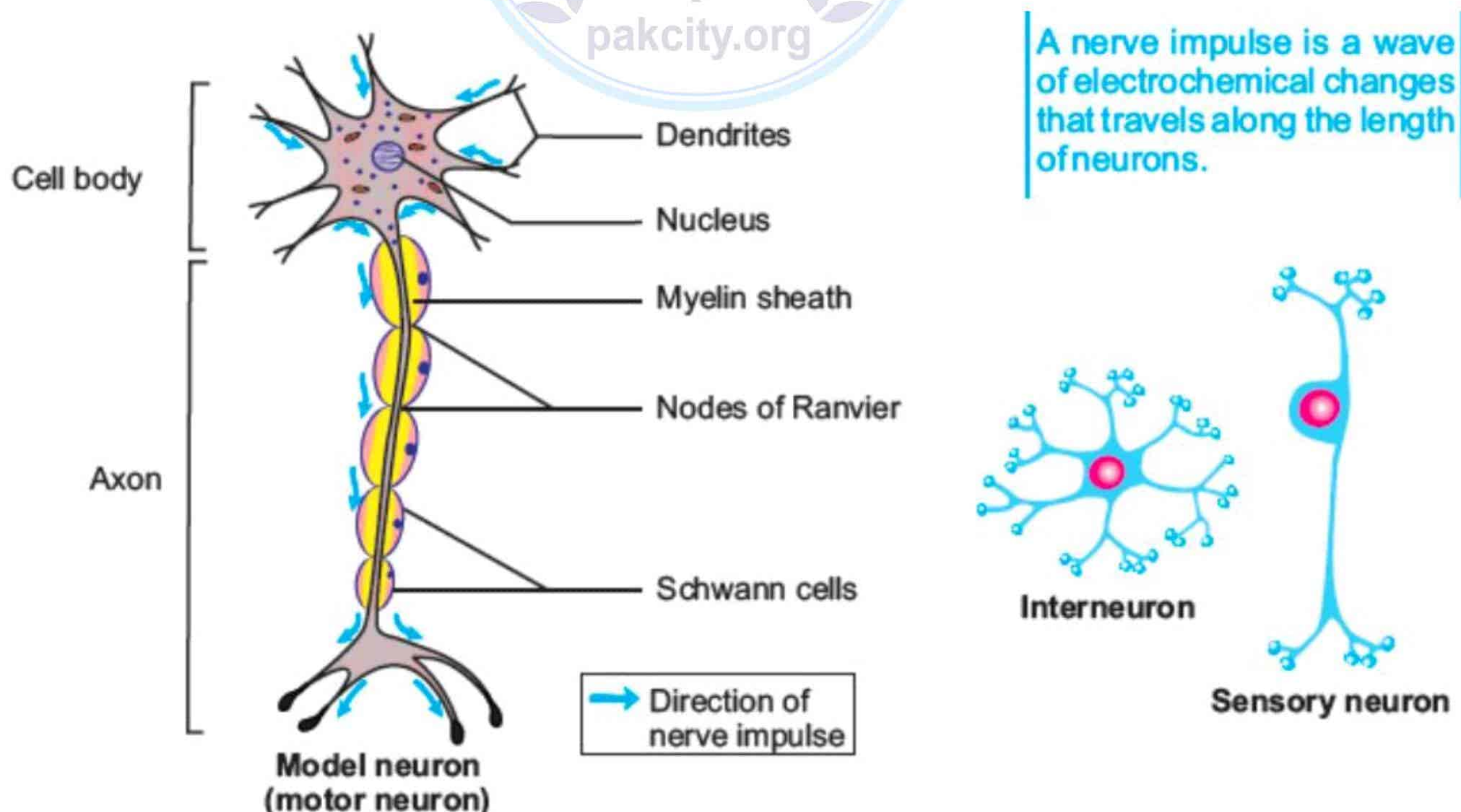


Figure : Neurons

Q12: **Define Neuron. Write the types of neurons.**

Ans: Neuron is the unit of nervous system able to conduct nerve impulses.

Types of Neuron:

- ❖ Motor Neuron
- ❖ Inter Neuron
- ❖ Sensory Neuron

Q13: **Differentiate sensory nerves from motor nerves.**

Ans: Difference between sensory nerves from motor nerves is:

Sensory Nerves	Motor Nerves
Sensory nerves contain, the axons of sensory neurons only.	Motor nerves contain axons of motor neurons only.

Q14: **Difference between motor nerves and mixed nerves.**

Ans: Difference between motor nerves and mixed nerves is:

Motor Nerves	Mixed nerves
Motor nerves contain the axons of motor neurons only.	Mixed nerves contain the axons of both i.e. Sensory and motor neurons.

Q15: **What is nerve impulse?**

Ans: **Nerve impulse:**

A nerve impulse is a wave of electrochemical changes that travels along the length of neurons.

Q16: **Write the function of dendrites and axons.**

Ans: Dendrites carry nerve impulses toward the cell body and axons carry nerve impulses away from cell body.

Q17: **State dendrites and their function.**

Ans: Dendrites are short, branched projections of neuron's cell body.

Function:

They transmit nerve impulses towards cell body.

Q18: **What is myelin sheath? And Write its function of Schwann cells?**

Ans: Schwann cells are special neuroglia cells located at regular intervals along axons. In some neurons, Schwann cells secrete a fatty layer called myelin sheath, over axons.

Function of Schwann cells:

Myelin sheath is an insulator so the membrane coated with this sheath does not conduct nerve impulse.

Q19: **What are ganglions?**

Ans: **Ganglions:**

In certain parts of body the cell bodies of many neurons form a group enveloped by a membrane. This is called ganglion.

Q20: **What is nerve? Write names of its three types.**

Ans: **Nerve:**

A nerve means the union of several axons that are enveloped by a covering made of lipid.

Type of Nerves:

- ❖ Motor Nerves
- ❖ Sensory Nerve
- ❖ Mixed Nerves

Q21: **What is the function of medulla oblongata?**

Ans: It lies on the top of spinal cord. It controls breathing, heart rate and blood pressure. It also controls many reflexes such as vomiting, coughing, sneezing etc.

Q22: **Write down the place and role of mid brain.**

Ans: Midbrain lies between hind brain and forebrain and connect the two brains.

Role of mid brain:

It receives sensory information and sends it to appropriate part of forebrain. Midbrain also controls auditory reflexes and posture.

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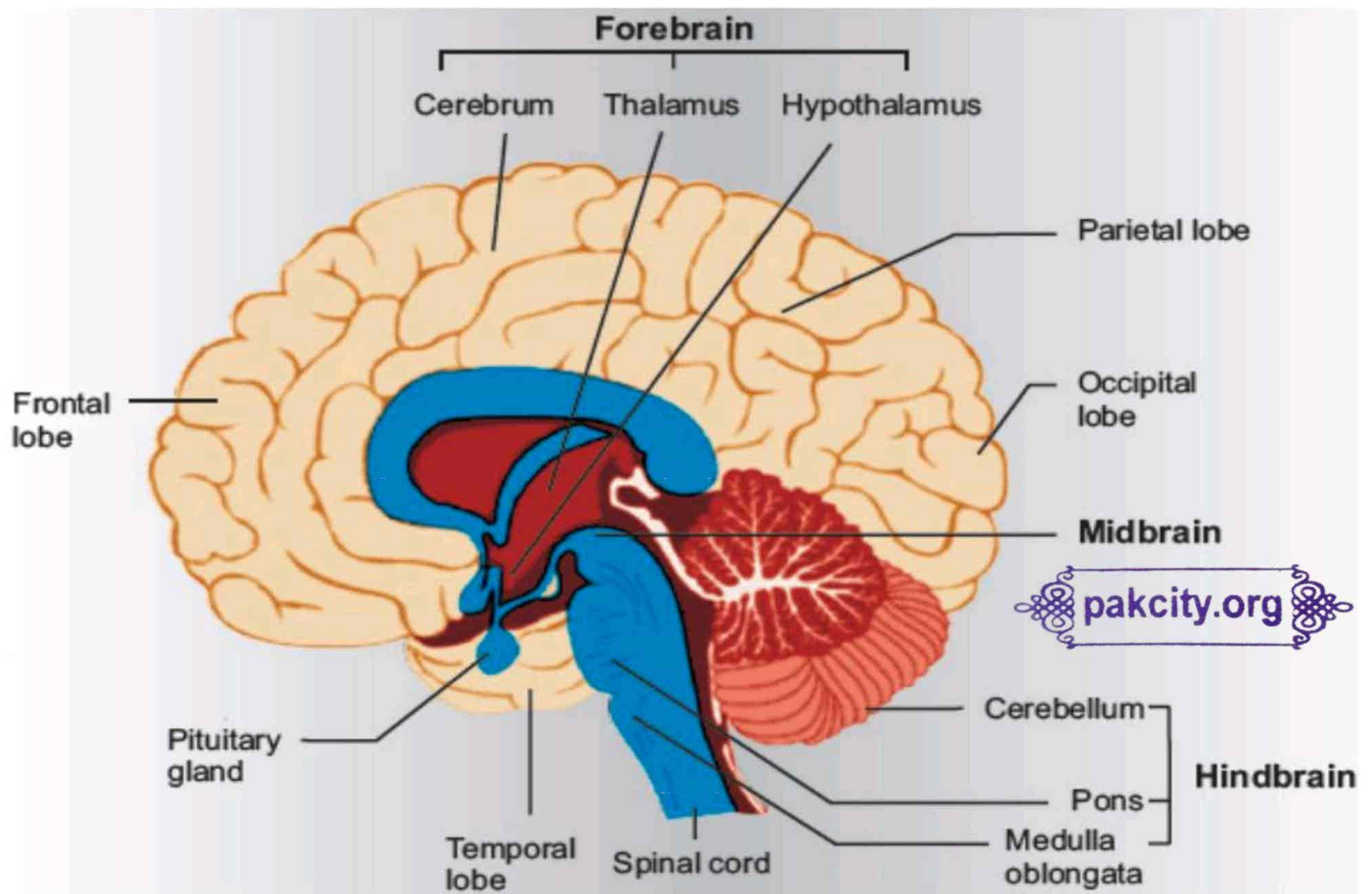


Figure Structure of human brain

Q23: Write a note on cerebellum.

Ans: Cerebellum:

- ❖ It is present behind medulla.
- ❖ It coordinates muscles movements.

Q24: Write a note on pons.

Ans: Pons:

- ❖ Pons is present on top of medulla.
- ❖ It assists medulla in controlling breathing.
- ❖ It also serves as connection between cerebellum and spinal cord.

Q25: What is hypothalamus? Write down its function.

Ans: Hypothalamus:

Hypothalamus lies above, midbrain and just below thalamus. In human, it is roughly the size of an almond. One of the most important functions of hypothalamus is to link nervous system and endocrine system. It controls the secretion of pituitary gland.

Function of hypothalamus:

It controls feelings such as rage, pain, pleasure and Sorrow.

Q26: What is hippocampus?

Ans: Hippocampus:

It is a structure that is deep in the cerebrum. Its functions for the formation of new memories.

Q27: Explain Brain stem.

Ans: The medulla oblongata, pons, and midbrain connect the rest of brain to spinal cord. They are collectively referred to as brain stem.

Q28: Write the function of thalamus.

Ans: It receives and modifies sensory impulses. It is involved in pain perception and consciousness.

Q29: Write two main function of spinal card.

Ans: It performs two main functions:

- ❖ It serves as a link between transmission nerve impulses from body parts to brain and from brain to all body parts.
- ❖ Spinal cord also acts as a coordinator responsible for some simple reflexes.

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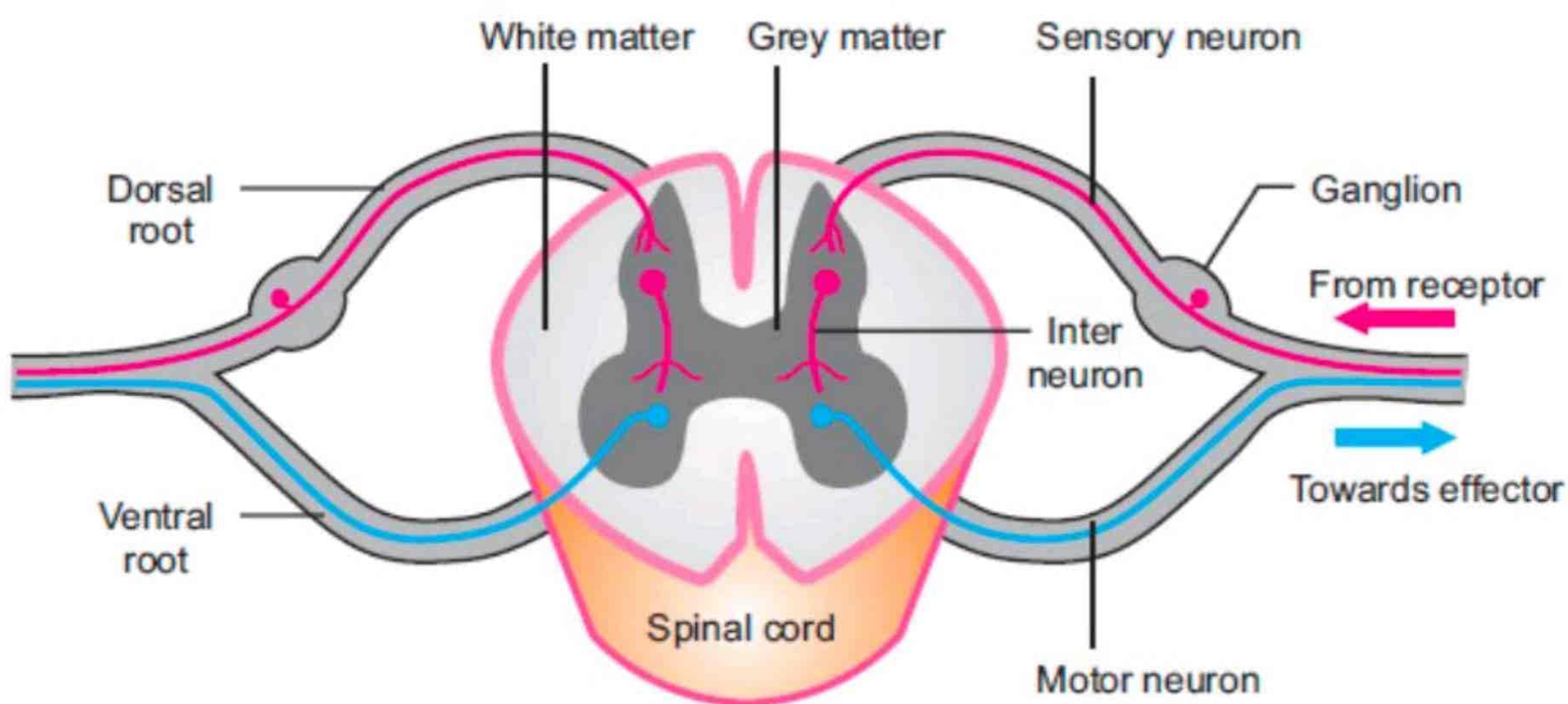


Figure Spinal Cord and Spinal Nerves

Q30: What is the difference between gray and while matter?

Ans: Difference between gray and while matter is:

Gray matter	While matter
The gray matter of nervous, system consists of cell bodies and non-myelinated axons.	White matter of nervous system consists of myelinated axons.

Q31: Differentiate between frontal and temporal lobe.

Ans: Difference between Frontal and temporal lobe is:

Frontal	Temporal
It controls motor, functions, permits conscious control of skeletal muscles and coordinates movement involved in speech.	It is concerned with hearing and smell.

Q32: Differentiate between Autonomic nervous system and CNS.

Ans: Difference between Autonomic nervous system and CNS is:

Autonomic nervous system	CNS
Autonomic nervous system is responsible for the activities which are not under conscious control. It consists of motor neuron that sends impulses to cardiac muscles, smooth muscles and glands.	CNS is responsible, for the conscious and voluntary actions. It includes all of motor neurons that conduct impulses form CNS to skeletal muscles.

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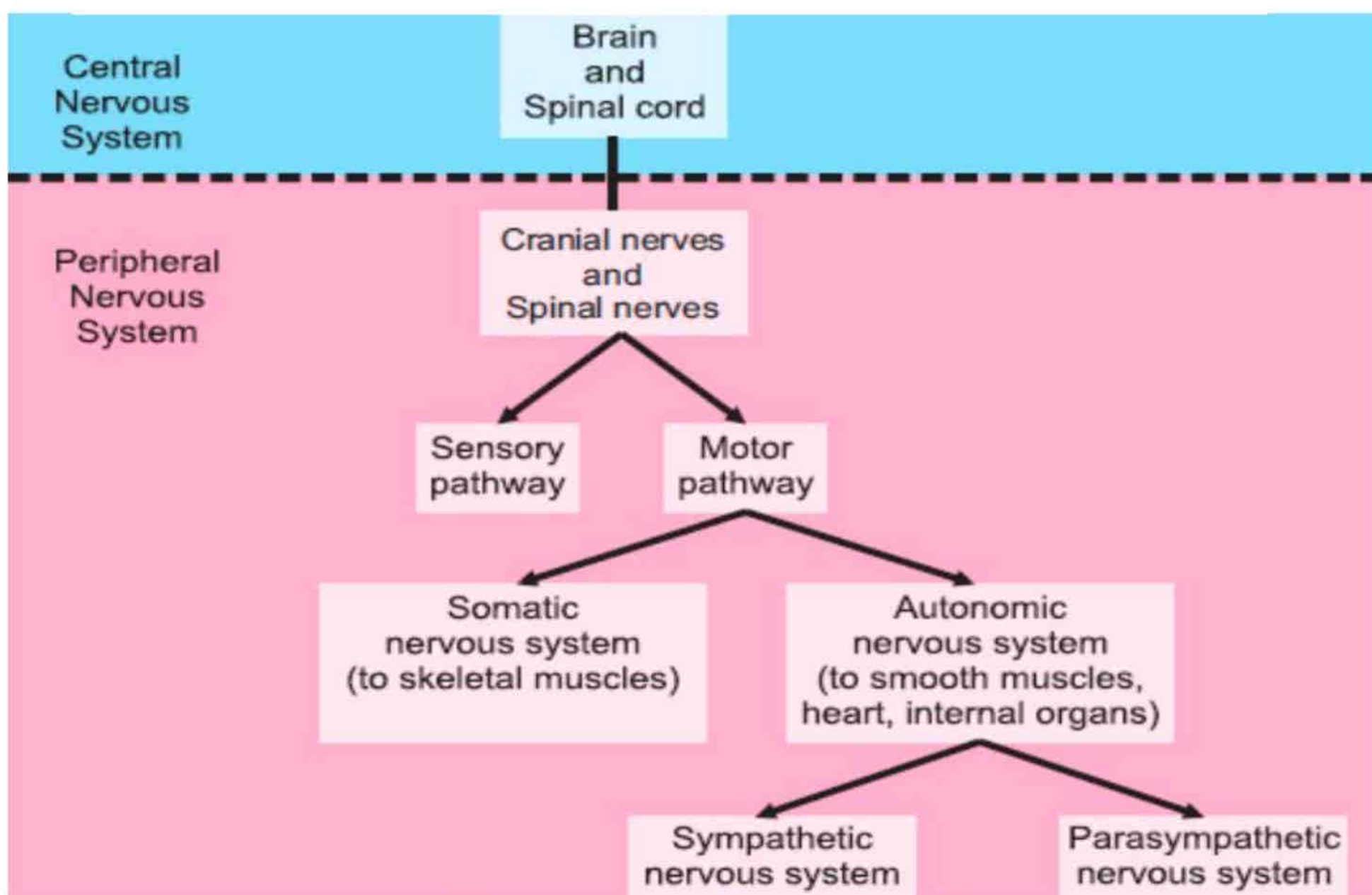


Figure Divisions of the nervous system

Q33: **Difference between cranial and spinal nerves.**

Ans: Difference between cranial and spinal nerves is:

Cranial nerves	Spinal nerves
❖ Nerves arise from brain called cranial nerves.	❖ Nerves arise from spinal cord called spinal nerves.
❖ Human have 12 pairs of cranial nerves.	❖ Human have 31 pairs of spinal nerves.

Q34: **Differentiate between central and peripheral nervous system.**

Ans: Difference between central and peripheral nervous system is:

Central nervous system	Peripheral nervous system
The central nervous system consists of brain and spinal cord.	Peripheral nervous system is composed of nerves and ganglia.

Q35: **Define reflex action.**

Ans: **Reflex action:**

The involuntary response produce by, CNS are sometimes very quick. These responses are called reflex action.

Example:

The most common example of reflex action is the withdrawal of hand after touching hot object.

Q36: **Define Reflex arc.**

Ans: **Reflex arc:**

The pathway followed by nerve impulse for producing a reflex action is called reflex arc.

Q37: **Differentiate between voluntary and involuntary actions.**

Ans: Difference between voluntary and involuntary actions is:

Voluntary action	Involuntary action
❖ An action which is under conscious control.	❖ An action which is not under conscious control.
❖ For example writing, dancing, walking etc.	❖ For example Heart beating, Digestion respiration etc.

Q38: **Define blind spot.**

Ans: **Blind spot:**

Optic disc is the point on retina where the optic nerves enters retina. There are no rods and cones at this point. That is why it is also referred to as the blind spot.

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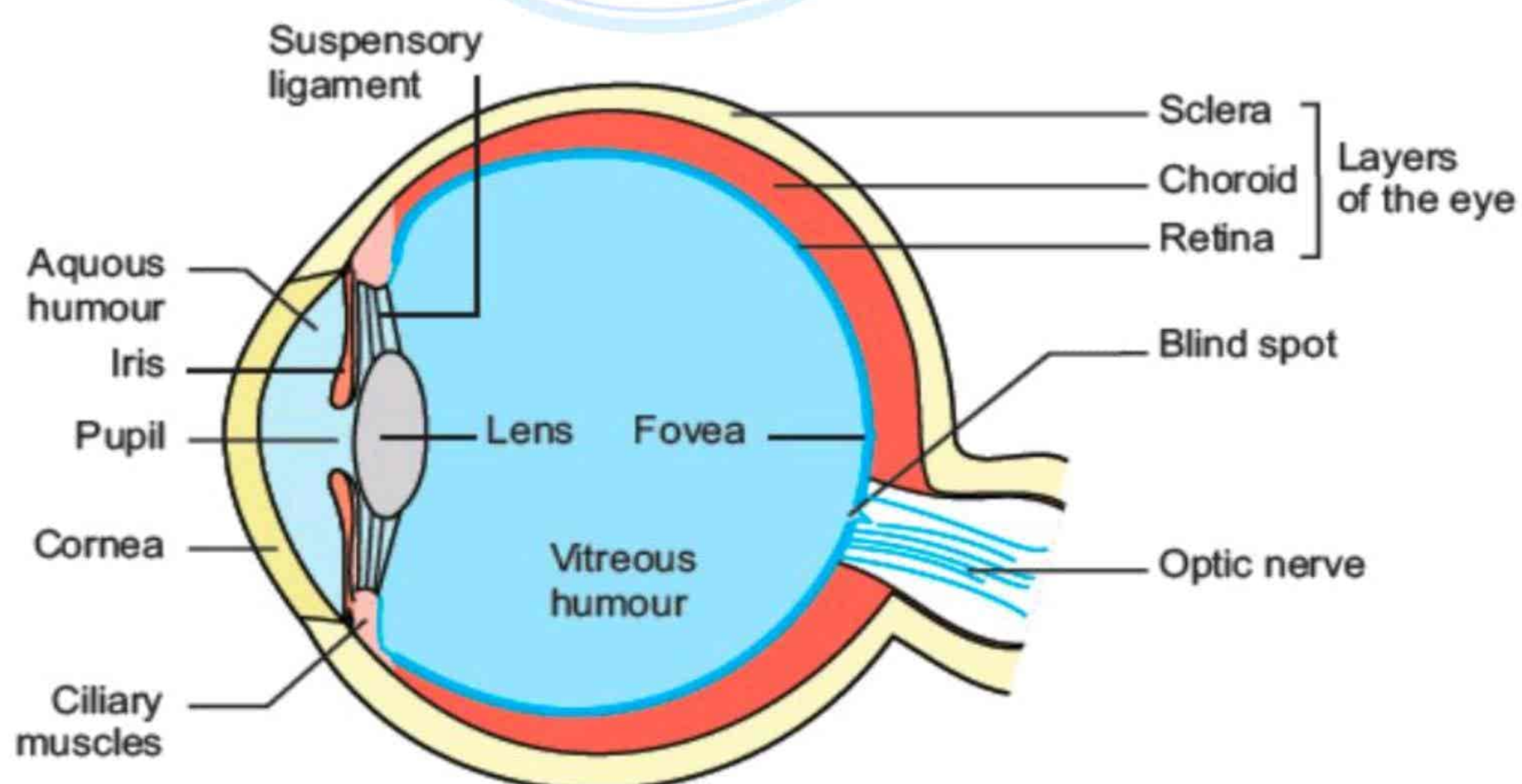


Figure Structure of human eye

Q39: **What is meant by night blindness?**

Ans: **Night blindness:**

Rods contain a pigment called rhodopsin, when light falls on rhodopsin, it breaks for generating a nerve impulse. In the absence of light, the breakdown products are again converted into rhodopsin. Body Synthesize rhodopsin from vitamin A and that is why the deficiency of vitamin A causes poor night vision. This problem is called night blindness.

Q40: What are the function of retina and optic nervous?

Ans: Lens focuses light on retina. As a result the image falls on retina. Rods and cones generate nerve impulses in the optic nerve. These impulses are carried to the brain, which makes the sensation of vision.

Q41: Where pons are present in the brain and what is their function?

Ans: Pons in present on the top of medulla. It assists medulla in controlling breathing. It also serves as a connection between cerebellum and spinal cord.

Q42: Describe the function of rods and cones present in the retina of eye.

Ans: Rods are sensitive to dim light while cones are sensitive to bright light and so distinguish different colours.

Q43: Write pupil reflex in dim and bright light.

Ans: Pupil constricts in bright light when the circular muscles of iris contract. Similarly, pupil dilates in dim light when the radial muscles of iris contract.

Q44: Differentiate between aqueous and vitreous humour.

Ans: Difference between aqueous and vitreous humour is:

Aqueous Humor	Vitreous Humour
The fluid present in the anterior chamber of the eye i.e. between the cornea and the iris, called aqueous humour.	Vitreous humor is the fluid present in the posterior chamber of eye i.e. between the iris and retina.

Q45: Why the eyes of dog and cat shine in the night?

Ans: The eyes of dog and cat shine in the night. The reason for this is the presence of tapetum behind the eye which is a layer capable of reflecting light.



Q46: Write the structure of internal ear.

Ans: Inner ear consists of three parts i.e. vestibule, semicircular canals and cochlea. Vestibule is present in the centre of ear.

Three canals called semicircular canals are posterior to vestibule. The cochlea is made of three, ducts and wraps itself into a coiled tube. Sound receptor cells are present within the middle duct of cochlea.

This diagram is just for understanding.

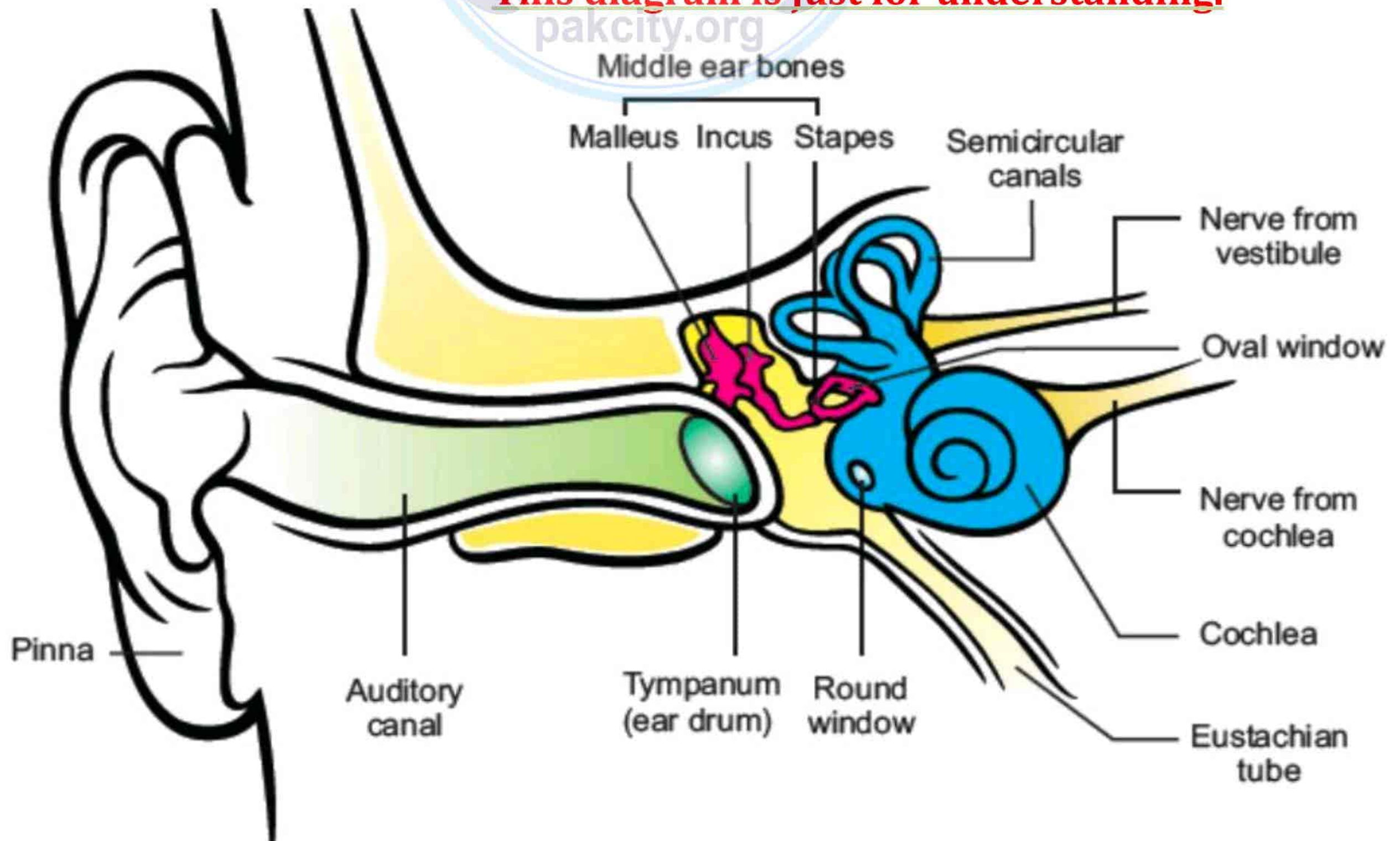


Figure : Structure of human ear

Q47: **Describe the two parts of middle Ear.**

Ans: **Oval window:**

Malleus is attached with ear drum, than come incus and finally stapes that is connected with membrane called oval window. It separates middle ear from inner ear.

Eustachian tube:

This tube regulates air pressure on both sides of ear drum.



Q48: **How deafness emerges?**

Ans: The defect of ear drum cochlea, middle ear icicles, or auditory nerve may cause deafness.

Q49: **How ears maintain body balance?**

Ans: Semicircular canals and vestibule help to maintain the balance of body.

Semicircular canals contain sensory nerves which can detect any movement of head. Vestibule can detect any changes in the posture of body.

Q50: **Why Ali Ibn-e-Isa is famous for?**

Ans: Ali Ibn-e-Isa was a famous Arab Scientist, he wrote three books on ophthalmology (study of diseases and surgery of eyes). He described 130 eye diseases and prescribed 143 drugs to treat these diseases.

Q51: **What is hormone?**

Ans: **Hormone?**

A hormone is a specific messenger molecule synthesized and secreted by an endocrine gland. These glands are ductless and release their secretions directly into bloodstream. Blood carries the hormones to target organs or tissues upon which they act.

Q52: **What is endocrine system and write four names of glands.**

Ans: The activities such as growth, reproduction, maintenance of glucose concentration in blood, reabsorption of water in kidney etc. needs to be regulated. Endocrine system perform this job. This system use chemicals to communicate with its effectors. These chemical are known as hormones.

Endocrine glands:

- ❖ Thyroid gland
- ❖ Pituitary gland
- ❖ Adrenal glands
- ❖ Pancreas
- ❖ Gonads
- ❖ Parathyroid gland

This diagram is just for understanding.

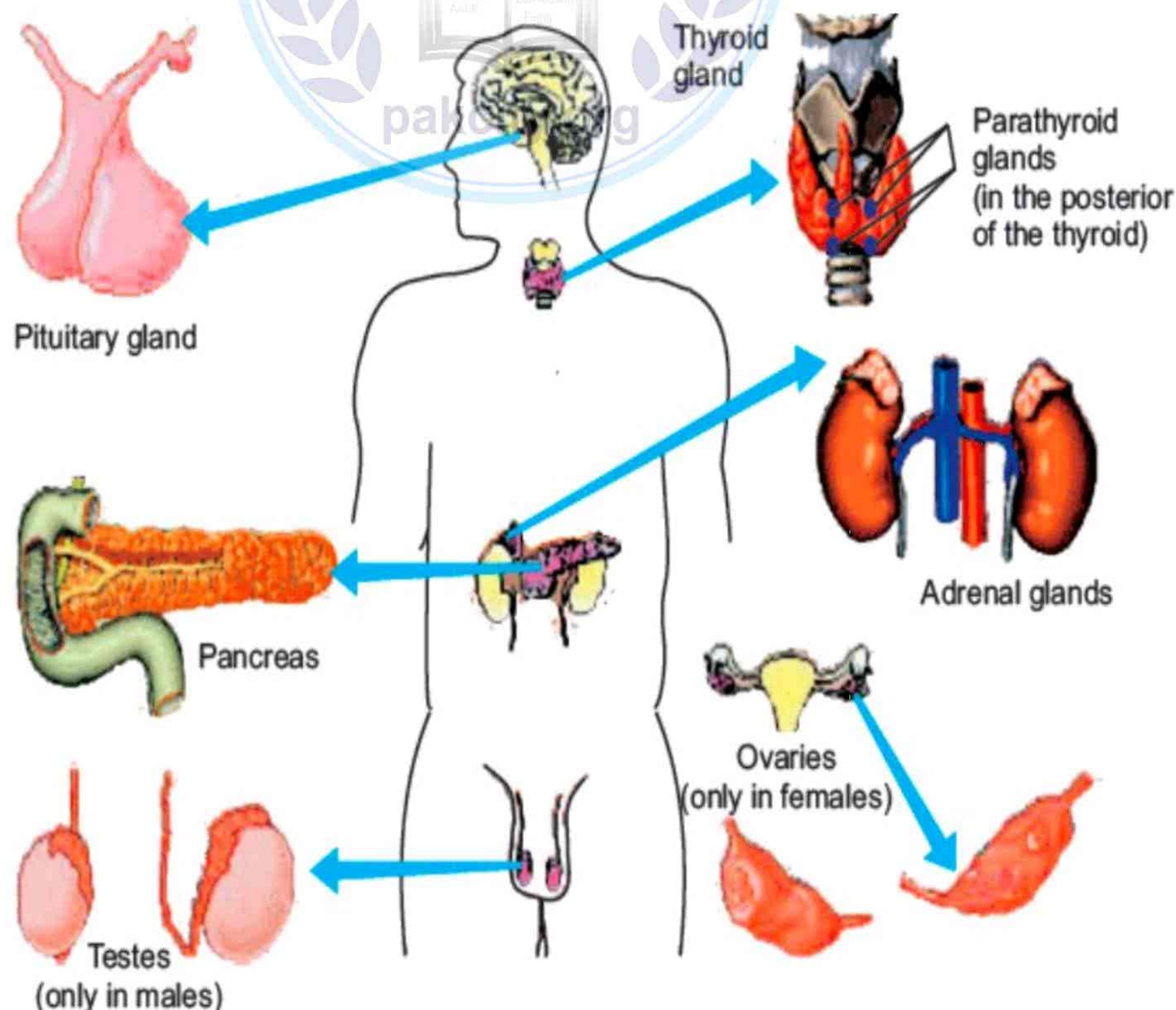


Figure : Endocrine glands in human body

Q53: What is difference between endocrine and exocrine glands?

Ans: Difference between endocrine and exocrine glands is:

Endocrine glands	Exocrine glands
The glands which are ductless and secrete hormones directly into blood stream are called endocrine glands.	The glands which have ducts for releasing their secretions are called exocrine glands.

Q54: What is the cause of Dwarfism?

Ans: If the production of somatotrophin hormone is diminished during growing age, the rate of growth decreases, which causes dwarfism.

Q55: Write two functions of oxytocin hormone?

Ans: Functions of oxytocin hormone are:

- ❖ It is necessary for the ejection of milk from breast.
- ❖ It stimulates the contraction of uterus walls in mothers for child birth.

Q56: Write the names of two hormones produced by ovaries.

Ans: The names of two hormones produced by ovaries are:

- ❖ Estrogen
- ❖ Progesterone

Q57: What is the function of parathormone?

Ans: Parathyroid gland secretes hormone parathormone which increases the level of calcium ions in blood.

Q58: How level of calcium ions is regulated in our blood?

Ans: Calcitonin and Parathormone complement each other and regulate the level of calcium ions in the blood.

Q59: Differentiate between Hypothyroidism and Hyperthyroidism.

Ans: Difference between Hypothyroidism and Hyperthyroidism is:

Hypothyroidism	Hyperthyroidism
Hypothyroidism is caused by the under production of thyroxin. It is characterized by low energy production in body and slowing down of heartbeat.	Hyperthyroidism is caused by the over production of Thyroxin. Its symptoms are increase in energy production, increased heartbeat, frequent sweating and shivering of hands.

Q60: What is meant by goiter?

Ans: **Goiter:**

Iodine is required for the production of thyroxin hormone. If a person lacks iodine in diet, thyroid gland cannot make its hormone. In this condition, thyroid gland enlarges. This disorder is called goiter.

Q61: Differentiate between the functions of hormones 'Glucagon' and 'Insulin'

Ans: Difference between the functions of hormones 'Glucagon' and 'Insulin' is:

Glucagon	Insulin
Glucagon influences the liver to release glucose in blood and so the blood glucose concentration rises	While insulin influences the liver to take excess glucose from blood and so the blood glucose concentration falls.

Q62: Write the names and effects of hormones secreted by testes and ovaries.

Ans: Single cell protein is gaining popularity day by day, because it requires limited land area for production.

Q63: What is novel protein or manifold?

Ans: Testes secrete hormones. e.g. testosterone which is responsible for development of male secondary sex characters such as growth of hair on face.

Ovaries secrete estrogen and progesterone which are responsible for the development of female secondary characters such as the development of breast etc.

Q64: **What is feedback mechanism?**

Ans: It means the regulation of a process by the output of the same process.

Q65: **Differentiate between negative feedback and positive feedback.**

Ans: Difference between negative feedback and positive feedback is:

Negative feedback	Positive feedback
<ul style="list-style-type: none"> ❖ In negative feedback the output of a process decreases or inhibits the process. This mechanism works to return a Condition towards its normal value. ❖ For example when the blood glucose concentration raises, pancreas Secretes insulin. ❖ It decreases the blood glucose concentration. ❖ Decline in the blood glucose concentration to a normal set point inhibits the secretion of insulin. 	<ul style="list-style-type: none"> ❖ In positive feedback the changes resulting from a process increases the rate of process. ❖ For example suckling action of an infant stimulates the production of a hormone in mother. ❖ This hormone works for the production of milk. More suckling leads to more hormone, which in turn leads to more milk production

Q66: **What is paralysis?**

Ans: It is the complete loss of function by one or more muscle groups.

Q67: **What are the causes and symptoms of Paralysis?**

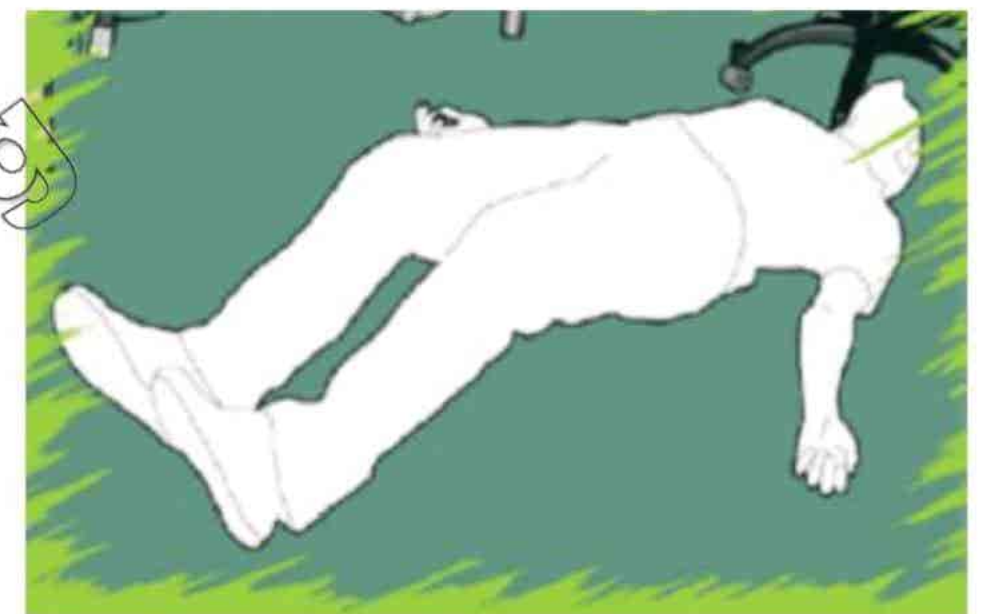
Ans: **Causes:**

Paralysis is most often caused by the damage to the central nervous system (brain and spinal cord). The damaged may be due to smoke, blood clotting in vessels or poison produced by polio.

Symptoms:

- ❖ These may also be paralysis in the lower extremities in all forelimbs.
- ❖ Patient may have weak paralysis her body or have paralysis one side of body.

This diagram is just for information.



During a seizure attack, objects should never be placed in a patient's mouth as it can result in serious injury. It is possible that the patient will bite his/her own tongue.

Q68: **What is epilepsy?**

Ans: Epilepsy is a nervous disorder in which there is an abnormal and excessive discharge of nerve impulses in brain.

Q69: **Describe the two causes of Epilepsy.**

Ans: In younger people, epilepsy may be due to genetic or developmental causes. In people over age 40 years, brain tumors are more likely to cause epilepsy. Head trauma and Central nervous system infections may cause epilepsy at any age.

Q70: **How epilepsy can be treated?**

Ans: Patients of epilepsy have to take medicines daily for the treatment as well as prevention of seizures. These are termed anticonvulsant or antiepileptic drugs.

Q71: **What is meant by nodes of Ranvier?**

Ans: Between the areas of myelin on an axon, there are non-myelinated points, called the nodes of Ranvier.

Q72: **What is Cerebrospinal fluid?**

Ans: **Cerebrospinal fluid:**

Fluid within ventricles and central canal is called cerebrospinal fluid (CSF).

Q73: **Write down a note on fore brain.**

Ans: Forebrain is the largest area of brain. It is most highly developed in humans. Following are the important parts of this region.

- ❖ Thalamus

- ❖ Hypothalamus
- ❖ Cerebrum

Q74: What is the length of spinal Cord? Write its function.

Ans: Spinal cord is roughly 40cm long.

Spinal cords perform two main functions:

- ❖ It serves as a link between body and brain.
- ❖ Spinal cord acts as a coordinator, responsible for some simple reflexes.

Q75: What is the role of effectors in the nervous coordination?

Ans: In nervous coordination neurons carry messages from coordinators to muscles and glands which act as effectors.

Q76: What is meant by meninges of the brain?

Ans: Brain is situated inside a bony cranium (a part of skull). Inside cranium brain is covered by three layers called meninges.


Functions of meninges:

Meninges protect brain.

It provides Oxygen and nutrient to brain tissue through blood capillaries.

Q77: Differentiate between myopia and hypermetropia.

Ans: Difference between myopia and hypermetropia is:

Myopia	Hypermetropia 
<ul style="list-style-type: none"> ❖ The elongation of eyeball results in myopia. ❖ Such persons are not able to see distant objects clearly. ❖ The image of a distant object is formed in front of retina. ❖ This problem can be rectified by using concave lens. 	<ul style="list-style-type: none"> ❖ It happens when eyeball shortens. ❖ Such persons are not able to see near objects clearly. ❖ The image is formed behind retina. ❖ Convex lens is used to rectify this problem.

Q78: How does coordination in unicellular take place?

Ans: Coordination also takes place in unicellular organisms. The response to stimuli is brought about through chemicals.

Q79: How urine output is low during summer?

Ans: Due to increased sweating, the water level of blood is lowered. As a result, pituitary gland releases more ADH into blood.

Long Questions

- Q.1: Discuss various components of coordinated action.
- Q.2: Define neuron and explain its structure? V.imp
- Q.3: Explain various types of Nerves.
- Q.4: Write the lobes of cerebral cortex and their functions. V.imp
- Q.5: Write a note on Forebrain. V.imp
- Q.6: Write note on midbrain and hindbrain.
- Q.7: Write a note on Spinal Cord. V.imp
- Q.8: Describe peripheral nervous system and its type with their functions.
- Q.9: What is reflex action? Explain. V.imp
- Q.10: Give two disorders of human eye with reasons and remedy.
- Q.11: Describe the contributions of Ibn al-Haytham in Optics.
- Q.12: Describe the structure of the Middle Ear.
- Q.13: Write functions of hormones secreted by adrenal glands and pancreas.
- Q.14: Write a note on Pituitary Gland. OR Describe Thyroid gland. V.imp
- Q.15: What is meant by feedback mechanism? Explain its types.
- Q.16: Write down about Paralysis and Epilepsy.

